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The use of herbicide combinations for controlling harmful plants in cotton crops, wherein the herbicide combination in question has a synergistically active content of

- (A) a broad-spectrum herbicide from the group of the compounds consisting of
- (A1) compounds of the formula (A1),

in which Z is a radical of the formula -OH or a peptide radical of the formula -NHCH(CH₃)CONHCH(CH₃)COOH or

-NHCH(CH₃)CONHCH[CH₂CH(CH₃)₂]COOH, and their esters and salts and other phosphinothricin derivatives,

(A2) compounds of the formula (A2) and their esters and salts,

$$HO \longrightarrow P \longrightarrow CH_2 \longrightarrow CH_2$$

- (A3) imidazolinones and their salts and
 - (A4) herbicidal azoles from the protoporphyrinogen-oxidase inhibitors (PPO inhibitors) and
 - (A5) hydroxybenzonitriles such as bromoxynil, and
 - (B) one or more herbicides from the group of the compounds which consists of



- (B0) one or more structurally different herbicides from the abovementioned group (A) or
- (B1) foliar- and soil-acting herbicides which are effective against monocotyledonous and dicotyledonous harmful plants,
- (B2) predominantly foliar-acting herbicides which are effective against dicotyledonous harmful plants, or
- (B3) predominantly foliar-acting herbicides which are effective against monocotyledonous harmful plants, or
- (B4) foliar- and soil-acting herbicides which are effective against predominantly monocotyledonous harmful plants, or of herbicides from several of groups (B0) to (B4)

and the cotton crops are tolerant to the herbicides (A) and (B) which form a constituent of the combination, if appropriate in the presence of safeners.

- 2. The use as claimed in claim 1, wherein glufosinate-ammonium is employed as active substance (A).
- 3. The use as claimed in claim 1, wherein glyphosate-isopropylammonium is employed as active substance (A).

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4. The use as claimed in claim 1, wherein one or more herbicides from the group

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- (B0) herbicides (A) from the group of the herbicides (A1) to (A5), which are not identical with component (A),
- (B1) norflurazon, fluometuron, methylarsonic acid and its salts, diuron, cyanazine, prometryn, clomazone, trifluralin, metolachlor, linuron, paraquat (salts) and pendimethalin,
- (B2) lactofen, oxyfluorfen, bispyribac and its salts and pyrithiobas and its salts,
- 30 (B3) quizalofop-P and its esters, quizalofop and its esters, fenoxaprop-P and its esters, fenoxaprop and its esters, fluazifop-P and its esters, fluazifop and its esters, haloxyfop and its esters, haloxyfop-P and its esters, propaquizafop and

(B4) sethoxydim, cycloxydim and clethodim is employed.

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- 5. The use as claimed in claim 1, wherein the herbicide combination comprises other crop protection active ingredients.
- 6. The use as claimed in claim 1, wherein the herbicide combination comprises adjuvants and formulation auxiliaries conventionally used in crop protection.
- 7. A method of controlling harmful plants in tolerant cotton crops, which comprises applying the herbicides of the herbicide combination, as defined in claim 1, jointly or separately, pre-emergence, post-emergence or pre- and post-emergence to the plants, parts of the plants, seeds of the plants or the area under cultivation.
 - 8. A herbicidal composition which comprises a combination of one or more herbicides (A), as defined in claim 1, and one or more herbicides from the group
 - (B0') one or more structurally different herbicides from the abovementioned group

 (A) or
 - (B1') methylarsonic acid, diuron, cyanazine, clomazone, trifluralin, paraquat and pendimethalin or
 - (B2') tactofen, oxyfluorfen and/or bispyribac and pyrithiobac or
 - (<u>B3'</u>) quizalofop-P and its esters, quizalofop and its esters, fenoxaprop-P and its esters, fenoxaprop and its esters, fluazifop-P and its esters, fluazifop and its esters, haloxyfop and its esters and haloxyfop-P and its esters or
 - (B4') sethoxydim, cycloxydim and/or clethodim or of herbicides of several of groups (B0') to (B4') and, if appropriate, adjuvants and formulation auxiliaries conventionally used in crop protection.
- 30 9. The use of the composition defined in claim 8 for regulating the growth of cotton plants.

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38 The use of the composition defined in claim 8 for influencing the yield or the constituents of cotton plants.